A reduction of the overall power loss in a resonance circuit is achieved by having excitation occur within excitation periods (Tex) of resonation periods (Tfre), during which the resonance circuit is in a free running resonance mode, the excitation periods being smaller than the resonation periods, to define an excitation duty cycle (Tex/Tcar) relative to the period of a carrier signal (Tcar) of less than 0.5. Preferably the resonance frequency (fres) of the resonance circuit is higher than the carrier frequency (fcar) of the modulated high frequency carrier signal over a resonance frequency detuning rate (dfres), defined by the frequency deviation of said resonance frequency from said carrier frequency relative to the carrier frequency (fres/fcar-1), substantially at most corresponding to half the excitation duty cycle.